

THE KALAM COSMOLOGICAL ARGUMENT

“[An eternally old universe] is so against reason that I cannot believe that any philosopher, however slight his understanding, has maintained this, for such a position involves an evident contradiction.” (Saint Bonaventure, *In Sent.* d.1, p.1, a.1, q.2)

Distinguished Proponents: John Philoponus, Al-Kindi, Saadia, Al-Ghazali, and St. Bonaventure

Summary Form of the Argument

- Step I. Whatever Begins to Exist has a Cause**
- Step II. The Universe Began to Exist**
- Step III. Therefore the Universe Has a Cause**
- Step IV. This Cause must be transcendent and immaterial, uncaused, unlimited in being, eternal and changeless, omnipotent, personal, and one.**

Expanded Form of the Argument

- I. Whatever Begins to Exist has a Cause**
 - a. *Ex nihilo nihil fit* (out of nothing, nothing comes). This proposition is evident and is confirmed all the time in our experience. It is intuitively impossible that something can “pop” into existence from nothing. Thus, for anyone who denies this principle, the burden of proof is on them.
 - b. Additionally, the self-evident *Principle of Sufficient Reason* holds that whatever exists must have what it takes to exist either in itself or in another. Anything that begins to exist obviously does not have in itself what it takes to exist (for that would mean it causes its own existence, which is a contradiction), which means it must have what it takes to exist from another.
- II. The Universe Began to Exist**
 - a. Philosophical Support: Five arguments showing that there cannot *be* an actual infinite, a completed infinite collection cannot be *formed* by successive addition, and even if there were an actual infinite series, such a series could never be *traversed* nor *added* to.
 - i. Impossibility of an Actual Infinite Number of Things¹
 - 1. If the universe is eternally old, then an actual infinite number of events has occurred
 - 2. But an actual infinite number of anything is impossible
 - a. Library of Infinite Books
 - i. Suppose an infinite set of alternating red and black books – the number of the black books would be the same as the total of both black and red.
 - ii. Take all the *odd numbered* books off the shelf and you have removed an infinite number, but an infinite number still remains (Infinite – infinite = infinite). Nothing was lost? To make this example more unbelievable, note that this action could be done 100, 1000, even an infinite number of times. Subtracting an infinite number of books from an infinite number of books even an infinite number of times still leaves you with the same number of books!

¹ An *actual* infinite is not the same as a *potential* infinite. “Actual” means completed. The number series and the future are only *potential* infinities, that is, they theoretically keep going on forever but never actually arrive there. The past however has been acquired or actualized and is no longer “potential”.

- v. Impossibility of Adding to an Infinite Duration ²
 - 1. If the universe is infinitely old, it has actually existed for an infinite duration
 - 2. But every passing moment adds to the universe's duration
 - 3. But it is impossible to *add* to an actually *infinite* duration (this is a contradiction)
 - 4. Therefore the universe is not infinitely old
- b. Contemporary Scientific Support: Based on the Isotropic Expansion and “Big Bang” origin of the Universe showing a point of infinite density where all matter and energy originated from nothing, it seems the universe is not infinitely old. Also the second Law of Thermodynamics says that given enough time, the universe, as a closed system, will “run down” and reach a state of equilibrium. This will result in either a “big crunch” (heat death) of the universe or an ever-expanding cold death. Given that neither has happened, we know the universe has not existed from all eternity. Note: The scientific support is not as conclusive as the philosophical; for science is based on inductive reasoning and may someday discover a cause for our universe (i.e. string theory) but the philosophical arguments cover all causes (i.e., there cannot be an infinite series of universes spawning other universes).

III. Therefore the Universe has a Cause

IV. The Cause must be transcendent and immaterial, uncaused, unlimited in being, eternal and changeless, omnipotent, personal, and one.

- i. *Transcendent and Immaterial*: First, we must note that any cause of the universe must transcend the universe. Were we to suppose that the cause of the universe was *within* the universe, we would in effect be saying that something which did not yet exist produced its own existence – which is impossible. The Cause must also be immaterial since the Cause is transcendent from the physical universe, it cannot be a material thing for that would make it part of the physical universe.
- ii. *Uncaused*: If the Cause itself were caused, then the regress would start again, and we have already seen that a regress cannot be infinite. For the same reason, the Cause cannot change either, since that again be subject to the problems of an infinite regress of events, which is impossible.
- iii. *Unlimited in Being*: Limitations of any sort are signs that a thing is caused; for they entail that a being has *these* qualities and not *some others*. In other words, with all limited beings, only one possibility is actualized from a set of possible others. But actualizing one possibility over another calls for a cause, and this Cause of the universe cannot itself be caused, since it must be the first cause (IV.ii). Therefore, this cause must be “pure Being” without any limitations whatsoever.
- iv. *Eternal* (timeless) and *Changeless*: A being that is not limited (IV.iii) has no potency to change, all existential possibilities are exhausted. As Aquinas writes “since God is infinite, comprehending in Himself all the plenitude of perfection of all being, He cannot acquire anything new, nor extend Himself to anything whereto He was not extended previously. Hence movement in no way belongs to Him.” (ST I.9.1) Moreover, no being can undergo an infinite duration in time (see II.v).

² This argument is only a slightly different from iv in that it looks not at an infinite number of distinct events coming to be and passing away but directly at the duration of the universe as a whole in time. In other words, this argument would apply to someone holding an absolute notion of time.

- v. *Omnipotent*: Follows from III.v since to be unlimited in any way is to be also unlimited in power. This power is evinced in its being the cause of all space, matter, beings and time.
- vi. *Personal*: The only way a being could be omnipotent would be if it were omniscient (for the only way we could say something is perfectly powerful is if it is knowledgeable enough to use its power perfectly; otherwise, its power would be limited, and it would not be an omnipotent being). So, the cause of the universe is omnipotent and omniscient.
- vii. *One*: There can only be one unlimited Being, because in order for there to be two, one would have to lack something the other one had, and to lack anything is not proper to an unlimited Being.

Objections

“This argument assumes an infinitely distant starting point in the past, but every point in the past is only a finite distance away, and every finite distance is traversable.”

The Kalam argument does *not* assume an infinitely distant “starting point” in the past; on the contrary it takes a beginningless past seriously. It is precisely the lack of a beginning that causes all the problems. *All* of an alleged infinite past can never have transpired. The problem is like trying to jump out of a bottomless pit or counting backwards from infinity. One cannot even get a foothold to get started on such an infinite task. The fact that as far back in the past as you go is only finite goes to show that the past is finite, because if the past were infinite, then one could not traverse that past (it is after all the same number of events both ways, going one direction does not make it easier to cross than going the other way).

“Quantum mechanics proves something can come into existence from nothing”

First, not all physicists agree how to interpret the data of quantum mechanics. Many, including those of the Copenhagen school of thought, argue that statements about the indeterminacy of the sub atomic level be taken as statements about our knowledge of reality and not about reality itself. In this way, it is not that reality is indeterminate; it is just that we do not know the underlying causes of quantum phenomena. So in the absence of a clear consensus on how to interpret quantum phenomena, and given the relatively recent nature of this field, it is reasonable to maintain the principle of causality. Secondly, that to say something comes into existence without a sufficient reason reduces to a contradiction by violating the principle of sufficient reason. If a thing’s sufficient reason for existing is nothing, then it does not have what it takes to exist, for that is what a sufficient reason is. To say a thing exists but does not have what it takes to exist is a contradiction.

“Couldn’t God make the world exist from all eternity?”

God’s omnipotence does not entail that he can produce anything that is inherently contradictory. In the same way that God cannot make a six-sided triangle, a round square, or make a rock so big that He can’t lift it, He also cannot add more events to an infinite number of events nor complete an uncompletable series.

“Georg Cantor proved mathematically that there could be an actual infinite”

Nothing stated here undermines what Cantor said about mathematics. What Cantor showed pertains only to the realm of mathematics and says nothing about the actual world. In fact, the mathematician David Hilbert (of “Hilbert’s Hotel” fame) himself an admirer of Cantor, agrees that his theory is not meant to apply to the actual world, “...the infinite is nowhere to be found in reality. It neither exists in nature nor provides an legitimate basis for rational thought... The role of the infinite to play is solely that of an idea...”³ Cantor made sense of the infinite as an idea, but that does not mean an actual infinite number of things can exist in reality, as the above contradictions show.

³ David Hilbert “On the Infinite” in *Philosophy of Mathematics* ed. Paul Benacerraf and Hillary Putnam (Englewood Cliffs, Prentice Hall, 1964) 151, cited in William Lane Craig, *The Kalam Cosmological Argument* (Eugene: Wipf and Stock 2000) 87

“An actual infinite could be traversed if given infinite time.”

This only exchanges one problematic infinite for another. Infinite time can never be completed for the same reason an infinite series of events cannot be completed; there is always one more event and one more moment of time to add. If the past were infinite time there would be no time left over, but clearly there is.

“Einstein proved that time is relative”

Einstein showed that the measure and rate of time is relative to the measurer’s speed and location. The theory of relativity does not show that the actual things themselves do not exist in successive stages (i.e. George Washington was born, became President, and died in that order). Time is the measure of an object according to before and after, so even if that measure and rate varies due to relative location and velocity, still the object measured exists in sequential stages.

Accordingly, the Kalam reasoning is a persuasive attempt to move to an inexorable conclusion - the existence of a supremely perfect Being who is the personal creator of the universe. This Being theists call God.